



# ***NRC NEWS***

**U.S. NUCLEAR REGULATORY COMMISSION**

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**The U.S. Nuclear Regulatory Commission,  
“Then and Now”**

**Remarks of  
Greta Joy Dicus, Commissioner  
United States Nuclear Regulatory Commission**

**at the  
Nuclear Energy Institute  
Fuel Cycle Conference**

**April 3 - 7, 2000  
Memphis, Tennessee**

Good morning everyone. It's a great pleasure for me to be here today and to have the opportunity to speak to you at the Nuclear Energy Institute's Fuel-Cycle 2000 conference. Let me begin by extending my appreciation to the Nuclear Energy Institute for hosting this very important conference, and to welcome all of you participating in this week's scheduled events. With the number of participants and representatives here today, it is clear that our national and international nuclear communities have a sincere collective interest in the direction the nuclear industry is heading and changes that will be effecting that direction. As most of you are aware, over the last few years the nuclear industry, the public, and the Nuclear Regulatory Commission (NRC) have been working together to address common interests and concerns regarding the NRC's current regulatory system and oversight involvement, and ultimately, to mutually resolve these issues without compromising worker and public health and safety or environmental protection. From my perspective, I view this dialogue as necessary, constructive, and beneficial. When taking on any change one must remember, that the process must always begin with the end-in-mind. Maintaining the safety and health of our stakeholders and the public are that end. My topic of discussion, **"The U.S. Nuclear Regulatory Commission, Then and Now,"** provides a panoramic look of the nuclear industry and the NRC, as well as those successes, challenges, and turning points that have allowed for our current path-forward of business and process improvement and change. Specifically, I will address and summarize the following topics:

- L Programmatic activities, roles, and responsibilities that currently exist within the NRC;
- L Events that have prompted self-assessment and change;
- L Changes that have taken place;
- L The general nature of changes to come; and
- L Related impacts to our stakeholders and the public.

Throughout the years, the establishment and implementation of a sound infrastructure to systematically and safely construct, operate, and manage our licensed facilities has been a common goal of both the nuclear industry and the NRC, and overall, we have recognized and shared many successes. While realizing these successes in our programs and efforts, we also have faced a number of short-comings from which we have gained a great deal of knowledge and experience. Experiencing those short-comings, identifying their root-cause, and implementing timely and effective corrective actions has facilitated the maturing of the nuclear industry and have brought us to where we are today. Additionally, advancements in technology and operations, coupled with the industry's continued awareness for improving process safety, personnel training, and management accountability, and most of all, being able to demonstrate safe, effective, and predictable operations, has afforded the NRC the opportunity to assess its existing regulatory and oversight structure and programs to gain better perspective of our own efficiencies and effectiveness. After 25 years of existence and in concert with the nuclear industry, the NRC is undertaking changes of its own and is continually in search of improving its business operations. Over the last few years, the nuclear industry and the public have raised several ideas of interest to the NRC, and have effectively gained the Commission's attention. Ideas that have made us re-think how the NRC currently conducts its business operations, as well as the effectiveness in communicating who we are and what we do. As a result, we have put forth and continue to refine a number of initiatives that will allow for a more risk-based, streamlined, and effective regulatory implementation and oversight process, which ultimately will improve the predictability and objectivity of our regulatory decisions. We actually consider many of these issues in the NRC Strategic Plan, which also includes performance goals and metrics, so that we can measure and evaluate our performance. Specifically, these goals include:

- L Improving the effectiveness and efficiency of our business operations;

- L Improving our communications with stakeholders and the public;
- L Maintaining public confidence;
- L Improving our consistency and predictability in interpreting and applying regulations;
- L Making activities and decisions more effective, efficient, and realistic, and
- L Decreasing unnecessary regulatory burden to our stakeholders, while maintaining safety, and providing adequate protection to our workers, our public, and our environment.

From rulemaking to standard review plan development, including licensing, inspection, and enforcement, the NRC's fuel-cycle, enrichment, reactor, spent-fuel, and waste management activities are being examined to further clarify our regulatory role and to streamline and improve the effectiveness and efficiency of our regulatory and oversight operations. In these same technical areas, the NRC continues its role with respect to external regulation of certain Department of Energy programs, such as high-level waste disposal, tank waste remediation, and mixed-oxide fuel-fabrication. Along these paths, we have also concentrated on establishing better lines of communication and more openly engaging and responding to both our stakeholders and the public. Regulatory formulation, decision making, and improving our objectivity and response time to submitted questions, comments, and petitions, are areas where the NRC has become more open, efficient, and transparent. From the examples provided, you can see that the NRC is part of and not separate from this changing environment. However, and I strictly emphasize, our primary mission, to **"protect public health, safety, and the environment"** and to **"promote common defense and security"** has not and will not change.

Within our current operations, regulatory and oversight responsibilities for commercial nuclear power reactors, fuel-cycle and enrichment facilities, spent nuclear fuel, and high-level waste lies within the Headquarters Offices of Nuclear Reactor Regulation (NRR) and Nuclear Material Safety and Safeguards (NMSS), as well as four NRC regional offices. A general summary of those facilities and/or activities that the NRC is responsible for and/or programmatically involved with, include:

- L 103 commercial nuclear power reactors;
- L 1 Uranium conversion facility;
- L 2 Uranium enrichment facilities;
- L 7 Fuel-fabrication facilities;
- L 31 Interim Spent-Fuel Storage Facilities operating or under development; as well as
- L Pre-licensing consultation and NEPA analysis involving the Department of Energy's Yucca Mountain Repository.

Additionally, source material recovery operations, decontamination and decommissioning activities, low-level waste disposal, and other external regulation efforts also play a major part in the NRC's regulatory and oversight mission. My focus today addresses those areas where regulatory and oversight initiatives have been impacted the most and where significant changes have already taken or are in the process of taking place.

Although the basis of the NRC's system for licensing, regulating, and overseeing nuclear facility construction and process operations is prescriptive in nature, it has adequately demonstrated and proven its effectiveness in maintaining safe operations, and in protecting our workers, our public, and our environment. Over time as with most situations, experiences are realized, lessons are learned, and improvements are made, therefore, change becomes inevitable. Both the nuclear industry and the NRC are experiencing such changes and are working together toward resolution. As evidenced by our

excellent and long-standing safety record, one cannot dispute the value and necessity of having an independent set of standards, codes, and regulations for an industry where consequences have been and can be devastating, and where the public is extremely skeptical. This is an area where I believe the NRC and the nuclear industry share a common appreciation for safety and health, and protection of the environment.

Over the last 25 years the nuclear industry has experienced technological advancements that have allowed for major advancements and improvements in many nuclear arenas. Along with these positive shifts, our industry has also gained many beneficial insights relating to worker, public, and environmental protection and safety. These advancements and progressions, specifically in areas such as nuclear safety and engineering, and coupled with a continued focus on improving worker safety awareness, has not taken place without recognition. Though certain events have challenged us, and the unknowns will continue to do so, one cannot dispute industry's continued success in improving its overall performance and in promulgating the importance and necessity of worker and public health and safety. This path of continuous improvement and demonstrated successes, along with the NRC's long-standing, effective, and continual involvement, has allowed for the NRC to confidently move forward in enhancing its regulatory development, licensing, inspection, and enforcement programs, while not compromising the health and safety of our workers, our public, and our environment. As brought to our attention, and through our own self-assessments, we are working toward refining and balancing our regulatory and oversight programs to be more risk and safety focused. The initial step in this direction surfaced as a result of the rupture of a UF<sub>6</sub> cylinder in 1986 at Sequoya Fuels and a near criticality accident in 1991 at the General Electric fuel-fabrication plant. Those two instances raised concerns about the control of non-radiological chemical hazards and licensee change control process. Based on these experiences, the NRC initiated a rulemaking to amend its requirements for fuel processing facilities in 10 CFR Part 70, "**Domestic Licensing of Special Nuclear Material.**" This amendment adopts a more risk-based approach to regulation. It also requires and emphasizes the importance of development of an **Integrated Safety Analysis (ISA)**. The ISA concept truly addresses the risk and safety-based regulatory approach to rulemaking, licensing, inspection, and enforcement. Essentially, it is a very fundamental and logical approach to identifying, evaluating, and managing risk. The basic steps considered in the ISA approach include:

- L The identification of potential process hazards;
- L Consequence evaluation of credible accident scenarios and accident sequences; and
- L The identification of safety systems and controls that are relied on for maintaining process safety.

Once the process hazards and the related safety systems and controls are identified, and the consequences are evaluated, one will then be able to gain an isolated sense of what it will take to adequately protect the worker, the public, and the environment. If properly carried-out, then safety can be managed commensurate with the associated risk.

Reflecting back to the 1986 Sequoya Fuels and 1991 General Electric incidents, and as a direct result of those incidents, the NRC took its initial step towards revising and improving its regulatory and oversight process. This move forward and its results to date, are the focus of my remaining discussion. The NRC has taken several streamlining steps to clarify and consolidate its efforts relating to risk-based regulation and oversight, minimizing jurisdictional and regulatory duplication, reducing stakeholder burden, and increasing public confidence in our system, process, and role as an independent regulator. The following provides a summary of those completed efforts and in-progress

initiatives of what has taken place to date:

## **RULEMAKING AND LICENSING - What we've done and where we're headed**

- L The new 10 CFR Part 63 proposed rule, **“Disposal of High-Level Radioactive Wastes In a Geologic Repository at Yucca Mountain, Nevada,”** and the associated **Yucca Mountain Review Plan**, are due to the Commission in April 2000. In preparing our Agency and staff for a Yucca Mountain license application from DOE, should that occur, the completion of these two documents is most essential. 10 CFR Part 63 is a risk-based rule focusing on both pre-closure and post-closure repository operations and includes the ISA approach for the pre-closure performance period and the Total System Performance Assessment approach for the post-closure performance period. In-line with this approach, DOE is in the process of finalizing its Yucca Mountain Siting Guidelines. This is a very important step for DOE, because the siting guidelines include the evaluation criteria and methodologies to be used for making a site suitability determination. As part of our statutory responsibilities under the Nuclear Waste Policy Act, the NRC has reviewed and commented on the draft guidelines and the Commission will eventually have to concur on the final guidelines as well. DOE's siting process is specific to the site suitability determination, and will be based on site characterization and waste form sufficiency results. Additionally, and as a clarifying point, the siting process is separate from any potential licensing process that the NRC would conduct if an application were submitted. Some questions have been raised regarding NRC's involvement in the DOE Yucca Mountain effort, and I wanted to make clear the difference between NRC's pre-consultation and environmental review involvement versus the licensing process, which are separate and distinct. **MOVING ON to our Part 70 initiatives.**
- L The amended 10 CFR Part 70, **“Domestic Licensing of Special Nuclear Materials,”** and related draft Standard Review Plan (SRP) are due to the Commission in May 2000. The rule and the SRP will include the ISA concept, as previously addressed, which allows for a risk and safety-based approach to licensing, regulation, and oversight of the NRC's 7 fuel-fabrication facilities. This approach also endorses the use of utilizing industry standards when possible and appropriate, which is also consistent with the policy of the NRC. You will find that the SRP is consistent in emphasizing that industry alternatives can be proposed. The SRP can be viewed as a safety-based template that provides a guided path in making one focus on what's important to safety, and how to manage the associated risks. It provides the necessary flexibility and burden reduction for the fuel-fabrication industry, and encourages the industry to be pro-active in identifying different, but comparable approaches and solutions to establishing their licensing basis. As one can derive, the SRP is detail oriented from a safety-based standpoint, but not prescriptive. After several years of hard work and dedication by NEI, the industry, and the NRC, we are in the final leg of bringing the Part 70 rule and the SRP in-line with risk- and safety-based regulation. One of the final parts of this process will take place in the April-May time-frame, when the NRC will conduct its public meeting to address the revised SRP.
- L Another highly visible effort is the area of reactor license renewal. I am pleased to tell you that the power reactor license renewal process is progressing well, extremely well by most measures. As you are aware, the NRC approved renewal of the Calvert Cliffs operating license on March 23, 2000, which is the very first U.S. reactor operating license renewal to take place. I might add, that the review and renewal process was completed approximately 2 months ahead

of projected schedules. Additionally, the Oconee nuclear power plant operating license renewal application is scheduled for completion by August 2000. Perhaps sooner. We initially projected a 30 to 36 month schedule to complete license renewal reviews and I am optimistic that the staff, the industry, and the Commission will be able to further streamline the license renewal process. Perhaps the most important performance indicator that speaks to the initial success of the reactor license renewal program is the growing industry interest and queuing up, for license renewal. Utilities are lining up for staff resources to support license renewal for their facilities. Licensees for about 15 units, for example, have all indicated their plans to submit a license renewal application within the next 2 ½ years.

- L Perhaps some of the most cross-cutting changes to date deals with our spent-fuel storage and transportation program. The rulemaking plan for revising 10 CFR Part 71, **“Packaging and Transportation of Radioactive Material”** is due to the Commission in May 2000. This effort will take-on reassessing the Generic Environmental Impact Statement (NUREG-0170), updating shipment parameters, cask designs, and dose models, and validating assumptions and modeling used in spent fuel risk analysis, which will give consideration to new cask designs, including dual-purpose casks. A summary report on stakeholder interests, and NRC staff and contractor reviews will be issued in June 2000, followed by additional public meetings in the summer time-frame. In-line with the 10 CFR Part 71 rulemaking effort, 10 CFR Part 72, **“Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste,”** is amending its Part 72.48, **“Changes, Tests, and Experiments”** change control process, to allow Certificate of Compliance holders to make design changes without prior approval of the NRC. Currently, only a licensee can make such changes. This burden reduction initiative will be implemented in April 2001. Technical specifications is another area where the industry has expressed a lot of interest, specifically with respect to the type of information that should be included in the TECH SPECS versus the safety analysis report. Lastly, we have been working very hard to better streamline our Certificate of Compliance (CoC) rulemaking and amendment process. NRC staff has made substantial improvements to shorten the rulemaking process and make it more efficient and effective. To streamline the internal rulemaking review process, the NRC has developed standard language that will be used for CoC rulemakings that add new cask systems to our General License listing. This has allowed staff to reduce time for internal NRC concurrence from 3 weeks to 1 week. We have also developed standard language for CoC amendments that will similarly reduce the review time for the amendment process.

### **THE OVERSIGHT PROCESS - What we’ve done and where we’re headed Nuclear Power Reactors**

Over the next year, perhaps the most visible change that will take place is with the way the NRC oversees safety at power reactor facilities.

The new Reactor Oversight Program was recently piloted at nine reactor sites - at least two in each of NRC’s four regions. The new program, offers sweeping changes to our inspection, assessment, and enforcement processes.

The success of the new reactor oversight process is important. The Commission believes that these broad-scale changes will allow the NRC staff to draw conclusions about licensee safety performance that are objective, predictable, defensible, and more easily communicated to all our stakeholders. We also envision the process will stimulate more timely NRC and licensee responses

when there is declining safety performance. As an added benefit, this new approach will permit licensees and the NRC to focus resources on those aspects of the plant that have the greatest impact on safety. I also believe that having technically sound performance indicator data available to the public will help to increase public trust and build public confidence in what we are doing and further clarify our regulatory role - in other words, making our decisions and the basis for them **TRANSPARENT**.

Both the industry and the NRC staff learned through this pilot process. Issues such as timely and accurate reporting of performance indicators, content of inspection reports - for example, whether to include positive inspection findings, readiness of the NRC staff and industry for wide-scale implementation of the revised process, and a strategy for revising the performance indicators, such as in the security area, are important issues that will be considered and appropriately resolved.

Changes will be implemented incrementally through a deliberate process that will include extensive stakeholder involvement. A staff proposal to implement the revised process for all 103 operating reactors in April 2000 is currently under consideration by the Commission.

### **Fuel-Cycle and Enrichment Facilities**

The NRC's fuel-cycle and enrichment inspection and oversight process is on a course similar to that being piloted for nuclear power reactors, however, it's currently in the developmental phase of the process. Recognizing that industry has not shared the same amount of interest and concern regarding these facilities, and that the hazards and risks are somewhat different, the potential chemical and radiological consequences that can result from process related events, can be severe. As with the reactor oversight process, the fuel-cycle effort is also focusing on performance indicator data that bounds those structures, systems, and components that are safety significant, and information addressing factors that challenge those controls. As you are aware, several meetings have taken place over the last few months with NEI, the industry, and the public, and more of these meetings will be conducted as well. The current path forward provides for a "Pilot Phase" implementation around the 2001 time-frame and to date, approximately three facilities have expressed preliminary interest in participating in the "Pilot Phase" process.

### **CLOSING REMARKS**

**As you can see, the NRC is most definitely pro-active in addressing regulatory reform from the safety and risk-based standpoint.**

Throughout these regulatory efforts, the NRC has included our stakeholders and the public and has made publically available, related rulemaking, licensing, and inspection information. The objective of this important step is not to try and please every individual, but to demonstrate that the NRC conducts its business operations in a fair, objective and independent manner, while ensuring adequate protection of public health and safety, and the environment. This approach helps to build public trust, gain public confidence, and demonstrates that the regulatory process is being carried-out in a transparent manner. Establishing and implementing formal public participation mechanisms, such as public meetings and workshops, addressing and reconciling public concerns in a fair manner and with an open mind, using plain language and terminology that is generally understood or recognized, not only helps to establish public trust and confidence, but to maintain it as well. Clearly communicating our thoughts and processes to our stakeholders and the public, involving them through formal participation mechanisms, and demonstrating a general effort to be open to constructive criticism, are

elements that are essential to effective and successful regulation and program implementation. These interactions provide early signals regarding dominant interests and concerns of those individuals and communities that will be directly or indirectly impacted by the action. By remaining receptive and responsive to those signals, the NRC continues to improve its credibility as an open minded objective regulator, while at the same time, ensuring a realistic, predictable, and stable regulatory framework, that is protective of the worker, the public, and the environment.

As I hope my presentation has made clear, in today's environment, both the regulator and the nuclear industry must be open to change, must maintain a sound, realistic, and predictable technical basis for its regulation and licensing basis, and must be able to ensure that these requirements are understood and are reasonably acceptable to the public, whose safety is our first priority. I hope that the insights and examples I've shared with you today provides a clear picture that the NRC is amenable to change and that we have demonstrated our openness to such change, without compromising the health, safety, and protection of our workers, our public, and our environment. Thank you.